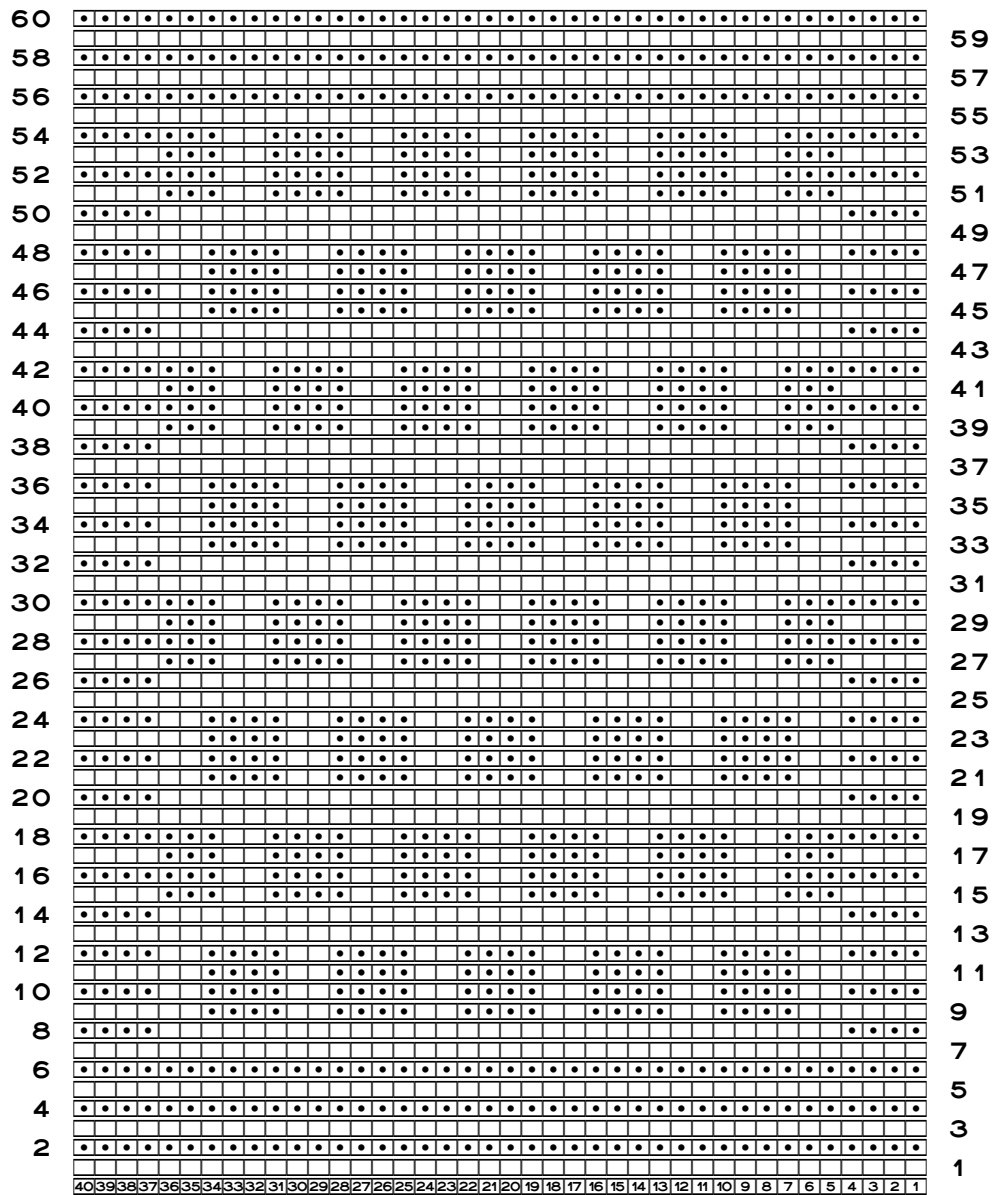


Chapter 17

TWEAKING A CHART

Sometimes we might want to fiddle with the details of a project. Since a chart shows us a good representation of what the actual knitting will look like, we can do quite a bit of experimenting before we ever cast on.

Let's take a critical look at the full chart of the basket-weave hot pad.



Tweak the Top Edge

Look at rows seven and eight, then look at rows fifty-five and fifty-six.

Between the bottom border and the first row of purl blocks, there are two rows of stockinette stitch. But between the last row of purl blocks and the top border, there is only one row of stockinette.

Option A: Add the Second Row of Stockinette

The last few lines of the chart would have to be changed to have two rows of stockinette above the final row of blocks.

60		61
		59
58		57
		55
56		53
		51
54		
52		

But do you see the complication that has now been added?

The garter stitch left and right borders no longer mesh neatly with the garter stitch top border. Look at the first several rows again.

12		
		11
10		9
		7
8		5
		3
6		1
4		
2		

See how the garter stitch bottom border joins smoothly and exactly to the garter stitch left and right borders?

The pattern designer—*cough*—is in a bit of a dilemma. But the missing row of stockinette is probably much less noticeable than the disjointed, disrupted garter stitch between the top and side borders would be.¹

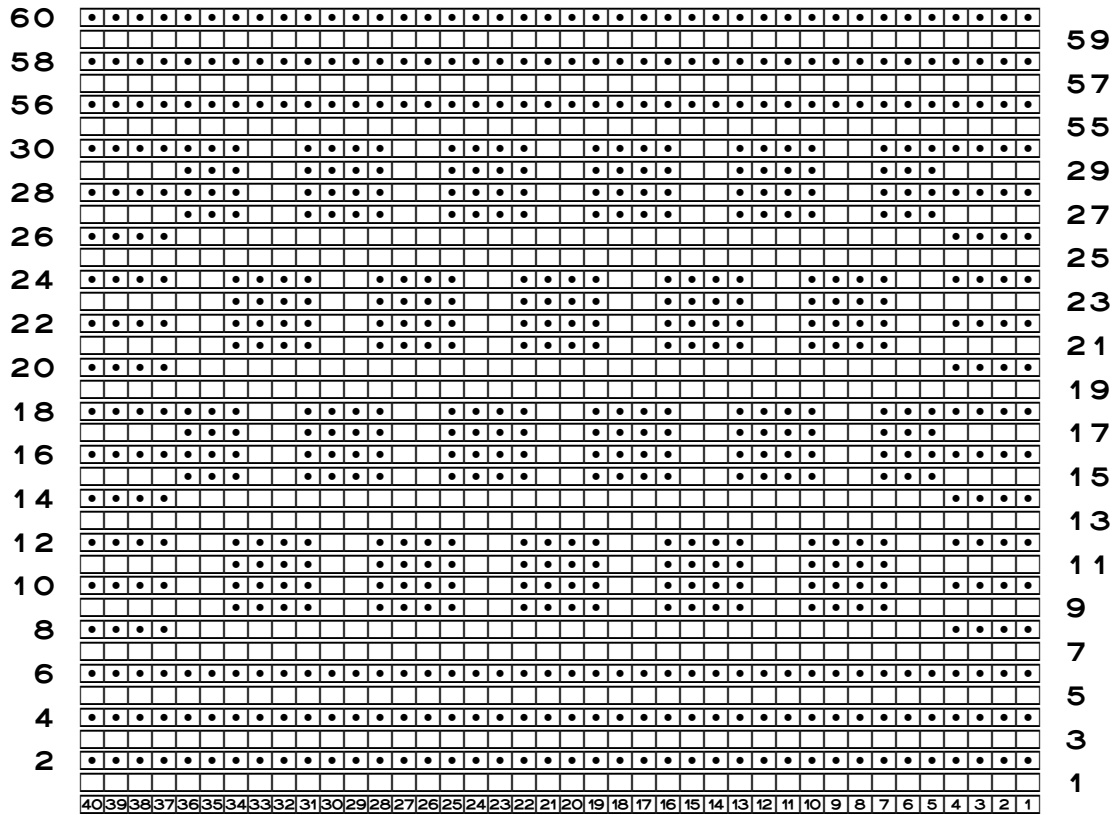
¹ It took me a **long** time to figure out why the disruption happened, even though the chart shows the reason with absolute crystal clarity. When we add the second row of stockinette above only the blocks, the four stitches at both ends of the top border continue to make garter stitch with all knits, but the center section switches to make garter stitch with all **purls**.

Let's create a more compact, yet equivalent, version of the complete basket-weave hot pad chart. We'll eliminate step by step the duplicate stitches and rows while maintaining those that show the issues we want to resolve.

Eliminate Duplicate Rows

Since the original instructions said to repeat rows seven through eighteen three times, we'll keep only one of those row repeats.

We cut our paper chart into three pieces to remove rows thirty-one through fifty-four, the last two copies of the row repeat (keeping, for the time being, the section we remove). In the computer, we simply delete those same rows.



This reduced chart leaves intact two full repeats of the two rows of blocks.

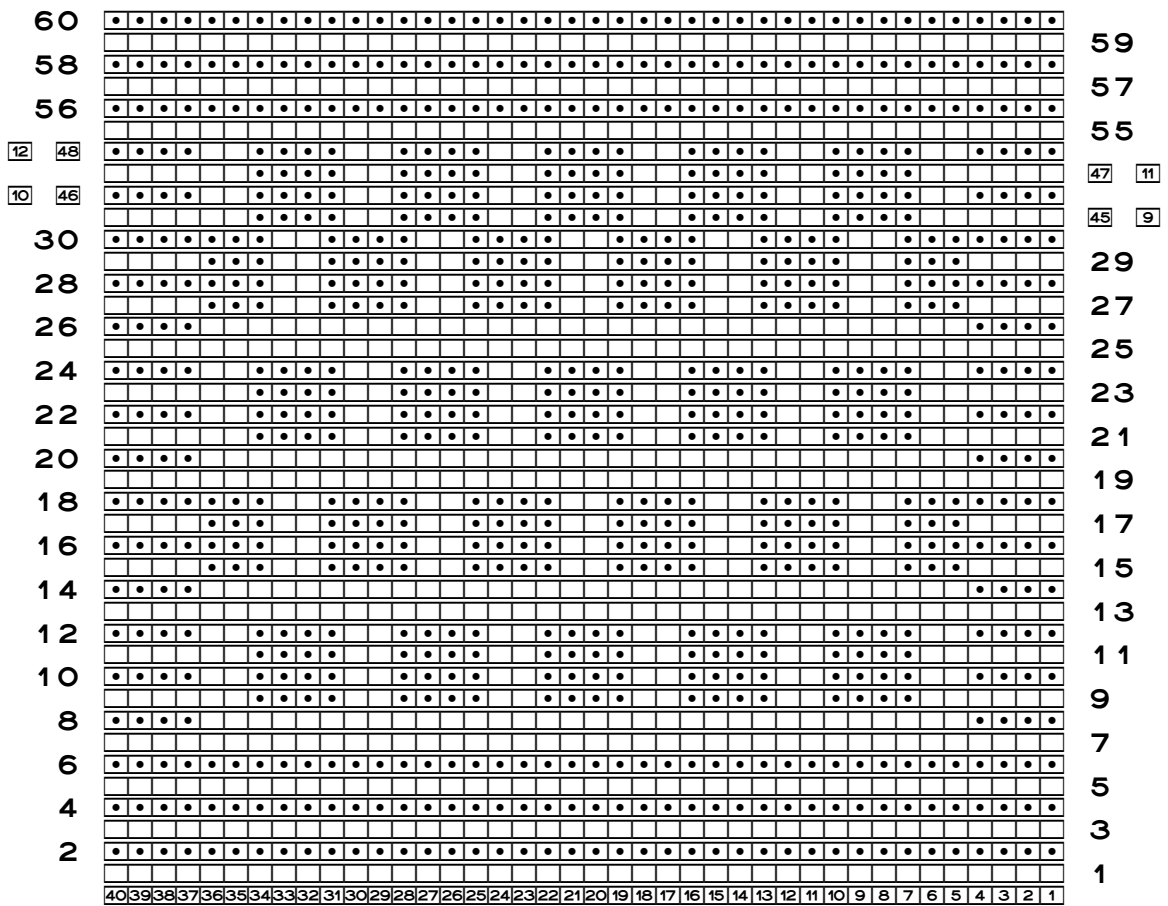
Add the Final Row of Original Blocks

One of the changes we want to make is to end the stitch pattern with a row of original blocks instead of a row of offset blocks. On paper, we can cut out from the leftover piece

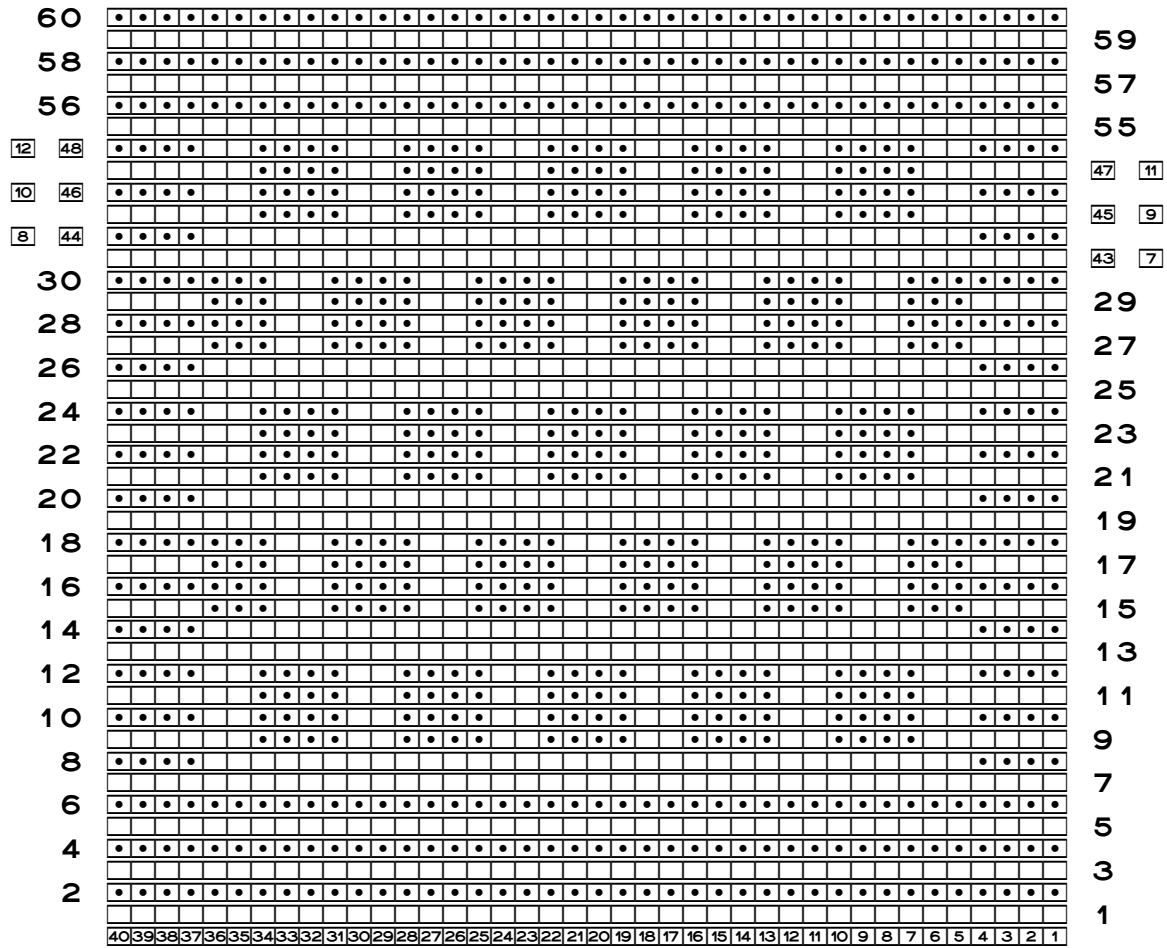
of the chart either of the two rows of original blocks, so we'll just arbitrarily select the upper one, in rows forty-five through forty-eight. We cut below row forty-five and above row forty-eight, then position the new four-row strip between the two chart pieces we already have.

In the computer, we would copy one set of the chart rows that contain a row of original blocks, and paste them above row thirty. Let's use rows nine through twelve.

The next few charts will show pairs of boxed row numbers to reflect as we go along the changes we're making. The paper chart's row numbers are in the inner boxes, and the computer chart's are in the outer boxes. (Yes, it's annoying, but only a few charts will have this double numbering.)



Whoops! Now the row of original blocks is directly on top of the row of offset blocks. We need to include the two rows of stockinette stitch below the row of original blocks to separate them from the offset blocks. We'll cut rows forty-three and forty-four from the left-over part of the paper chart, and in the computer we'll copy rows seven and eight.



That’s better.

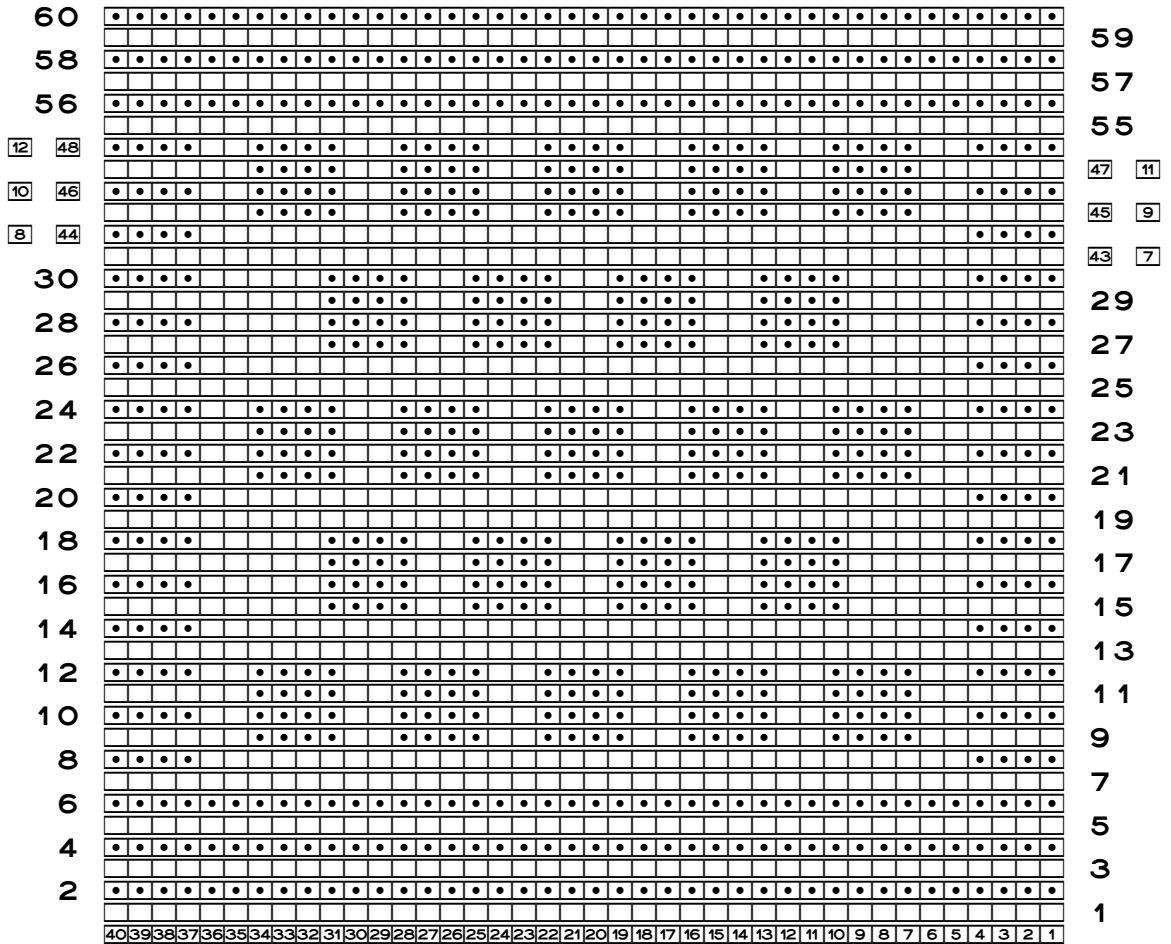
Now, in this shorter version of the chart, we still have only one row of stockinette between the last row of blocks and the garter stitch top border, still labeled row fifty-five.

So far the changes we’ve made have not disturbed the continuity of the garter stitch left and right borders where they meet the garter stitch top border. But we still can’t put a second row of stockinette before row fifty-five **and** keep the garter stitch borders uninterrupted where the top border meets the left and right borders. It just can’t be done. Our choice on this issue is the same as it was before.

Eliminate Partial Blocks

But we **can** get rid of the partial blocks that bump into the left and right borders. If we charted on paper, we erase the purl dots, and if we charted in the computer, we select those

purl symbols and replace them with knit symbols. Stitches five through seven and thirty-four through thirty-six on rows fifteen through eighteen and twenty-seven through thirty need to be changed to knits.

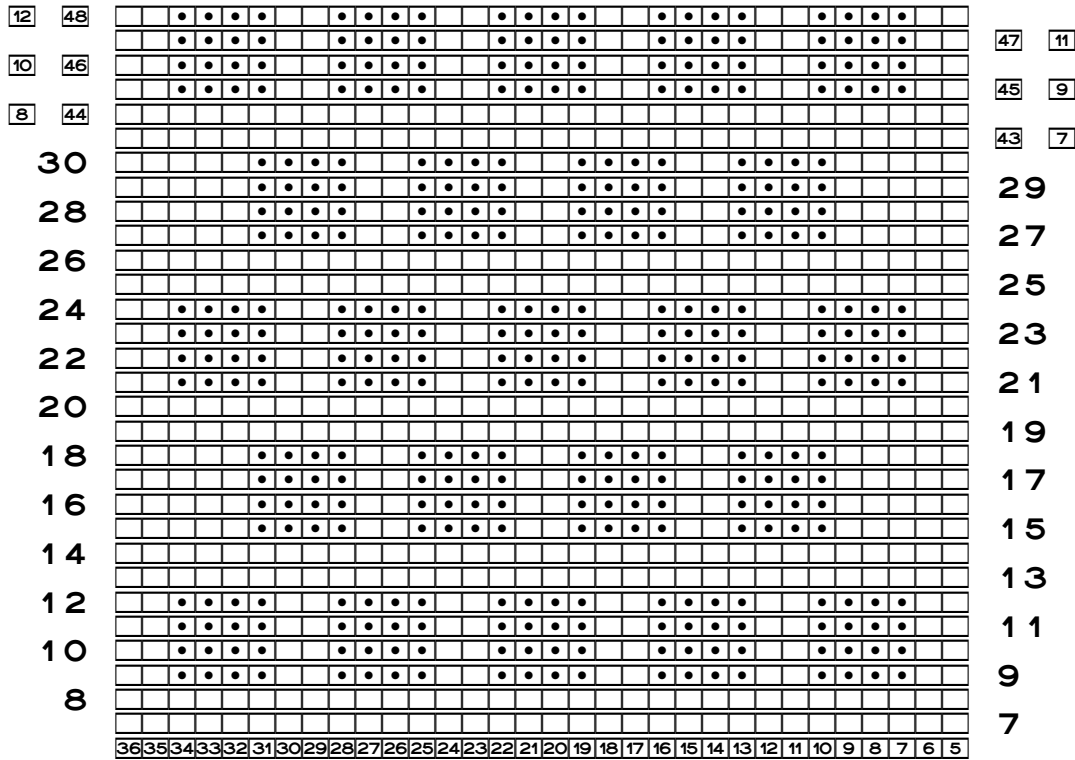


Remove the Borders

Let's remind ourselves that what we're trying to do is tweak the basket-weave stitch pattern, not piddle around with borders, so we need to do a border-ectomy (and as a bonus, we can use a bigger font size here in the book). We could also have done the border-ectomy as the very first step.

On paper, we simply cut the bottom and top borders off. After we cut the left and right borders off, we'll then have to cut the row numbers off the strips of the left and right borders, then tape them to their horizontal strips of symbols.

In the computer, we delete the first six and last six rows to remove the bottom and top borders. To remove the left and right borders, we delete the first four and last four stitch symbols on each row. Our word processor may have the ability to select the four stitches of an entire border at once, which greatly simplifies the task. See the section “Is There an ‘Alternate Selection Mode?’” in part four’s “More Charting Tips” for details.

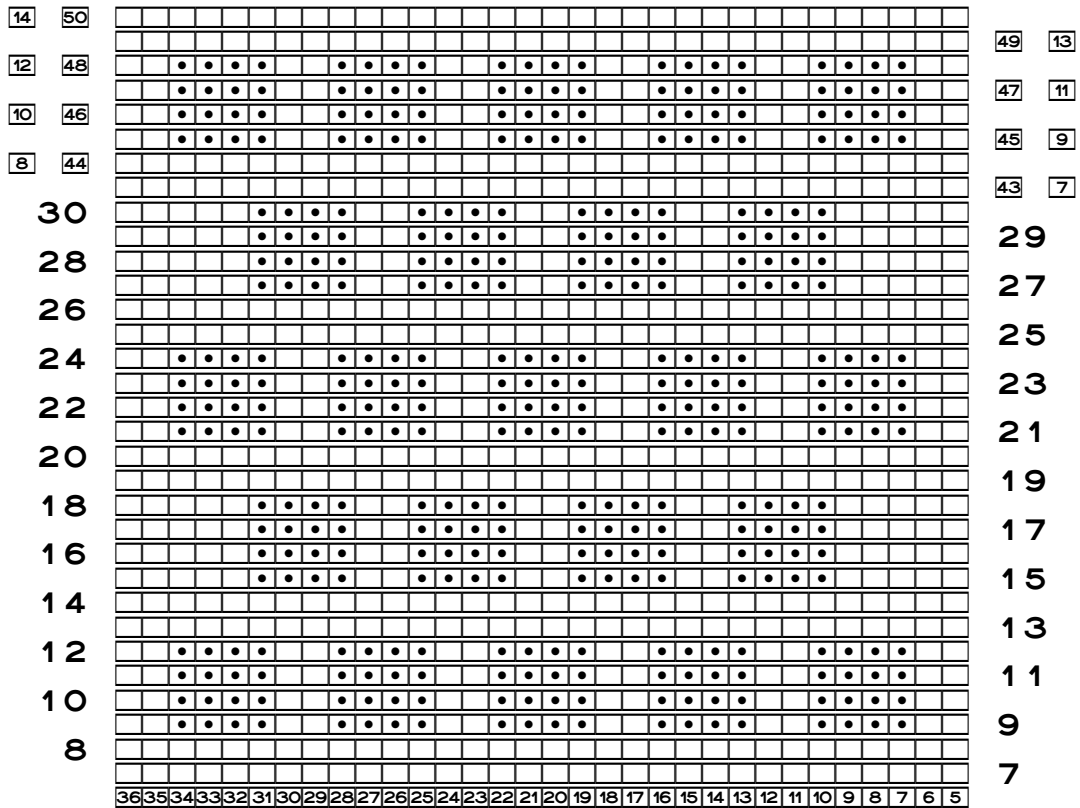


We’ve now eliminated the garter stitch borders that made it impossible to have two rows of stockinette above the last row of blocks, so we’ll put in those two rows of stockinette.

Add the Final Rows of Stockinette

On paper, we cut away rows forty-nine and fifty from the leftover pieces, remove the border symbols and reattach the row numbers as before, then place that strip at the top.

In the computer, we had copied over rows nine through twelve to repeat the original row of blocks as the last row of blocks, so we’ll copy the two rows of stockinette that follow them and paste them in to be the two rows of stockinette to make the top edge completely mirror-image the bottom edge.



Are We There Yet?

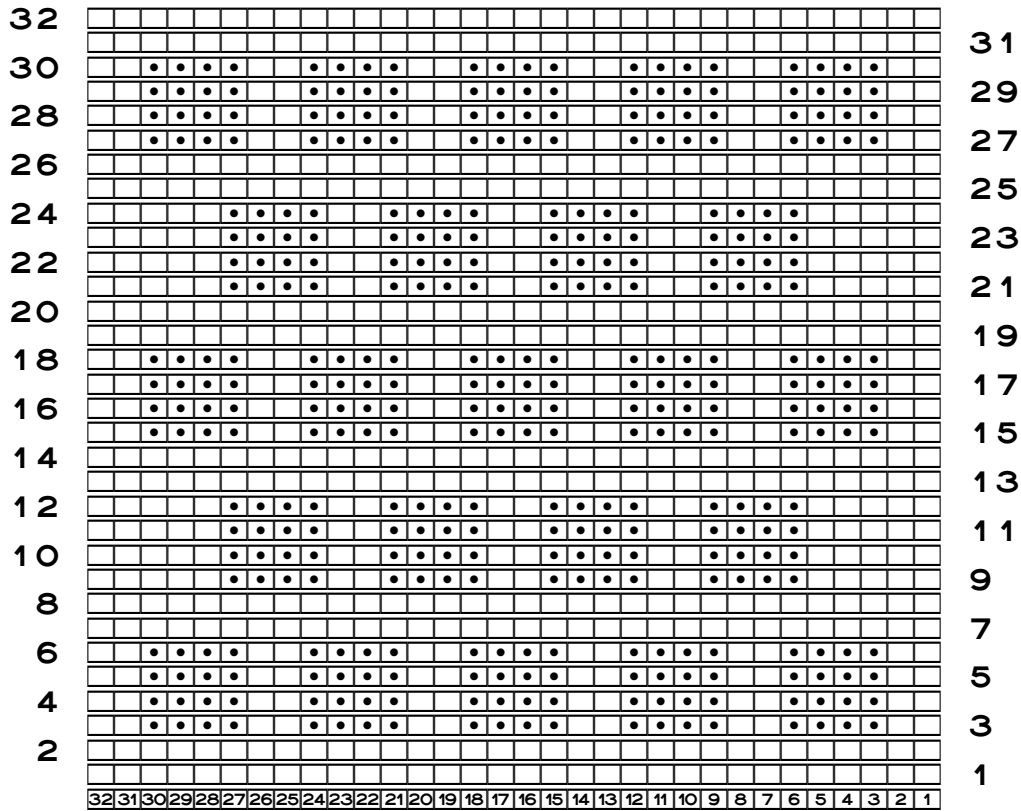
This smaller chart is equivalent in its essentials to the complete hot pad chart. It has several rows of original and offset blocks, with multiple purl blocks on each row. Let's verify that it also reflects the changes we wanted to make to the stitch pattern.

- ☉ One goal was to eliminate the partial blocks that touched the left and right borders. This chart has fixed that problem.
- ☉ Another goal was to have a row of original blocks at the top edge, to completely match the bottom edge. Repeating at the top of the chart the six rows needed for a row of original blocks has fixed that problem.
- ☉ And finally, since we've removed the borders, we have two rows of stockinette at the top of the chart to match the two rows at the bottom of the chart.

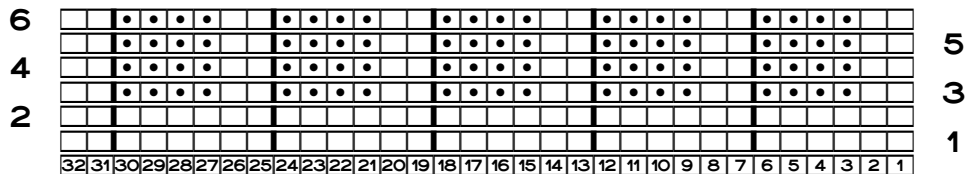
Now we determine the variation's pattern repeat, including the plus stitch(es) and/or plus row(s).

Find the Pattern Repeat of Variation 1

First, let's renumber the rows, because we're both tired of having doubled-up and duplicated row numbers. While we're at it, let's renumber the stitches also.



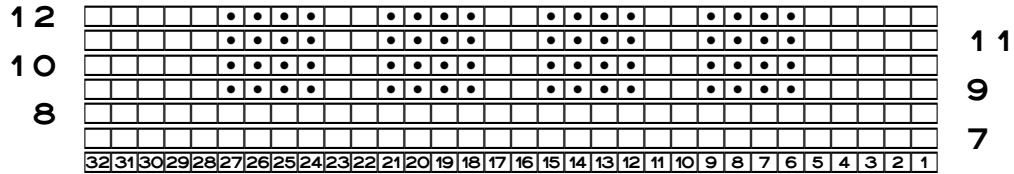
Since the row of original blocks (in what used to be chart rows seven through twelve and is now in rows one through six) is identical to the one in “Finding the Pattern Repeat,” we can just use the stitch repeat we already found for those rows.



Stitches one through six form the stitch repeat for these first six rows, and stitches thirty-one and thirty-two form the plus stitches for those rows, making the left and right edges mirror-image.

Find the Stitch Repeat in the Row of Offset Blocks

This row of offset blocks doesn't match the one we had before.

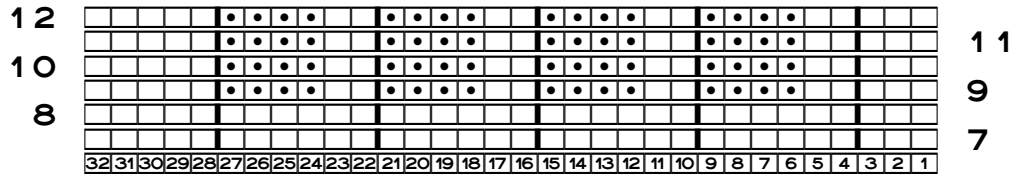


We can see at a glance that we have the same six-by-six groups of stitches forming the purl blocks and the stockinette columns between them, but we also have those large groups of public-side knit stitches at the beginning and end of each row.

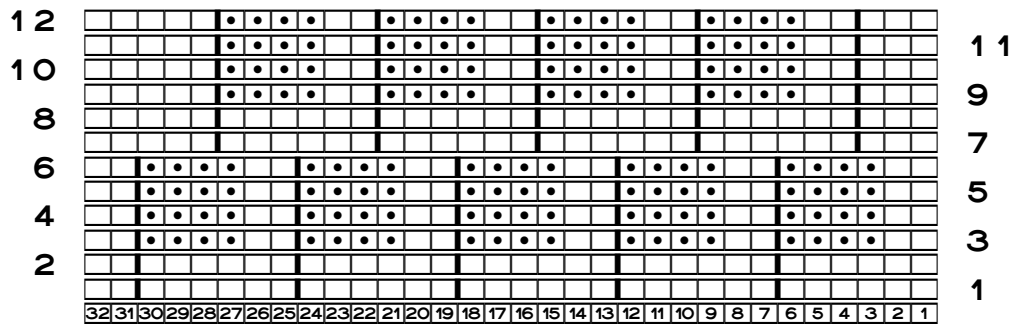
We have the same two options here that we had in “Finding the Pattern Repeat.”

Option A: Keep the Same “Rubber Stamp”

Some of us will want to put the stitch repeat boundaries in these places



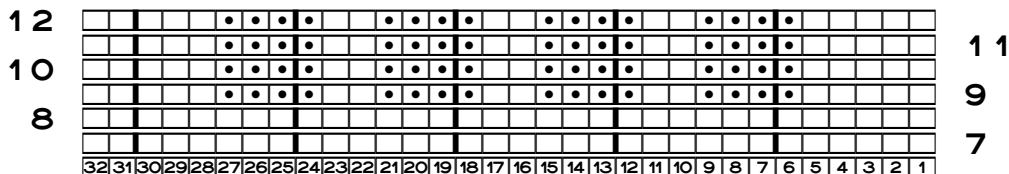
because this placement will let us use the same “rubber stamp” that we used on the row of original blocks. As we saw the first time, if we need stitch markers between each repeat in a complicated stitch pattern, we will have to move them every time we switch from one placement to another, and some patterns may have multiple hiccup points in their row repeats.



And exactly as in the earlier chapter, we may not want to move the markers while we're working with needles and yarn, so we're going to see if we can find an aligned, straight-edged stitch repeat.

Option B: Try the Aligned Pattern Repeat

Let's see what happens if we extend the original blocks' stitch repeat boundaries into the off-set blocks.



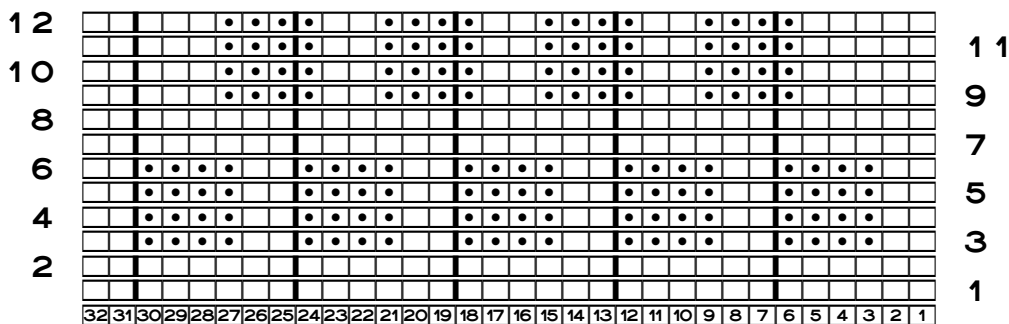
Does this placement help us?

Three of the four center groups (stitches seven through twelve, thirteen through eighteen, and nineteen through twenty-four) are all identical in the row of offset blocks, as though made with a rubber stamp (but a different stamp than for the row of original blocks). They also match what we found in the earlier chapter, where we had the three left-most stitches of a purl block and only the right-most stitch of the neighboring block within the stitch repeat.

But the stitches before and after these three groups are not alike. The group from stitch one through stitch six doesn't match the group from stitch twenty-five through stitch thirty, nor does it match any of the three identical groups. We still have that pair of stitches in thirty-one and thirty-two as well.

Resolving the Stitch Repeat

Let's put the charts of both rows of blocks together.



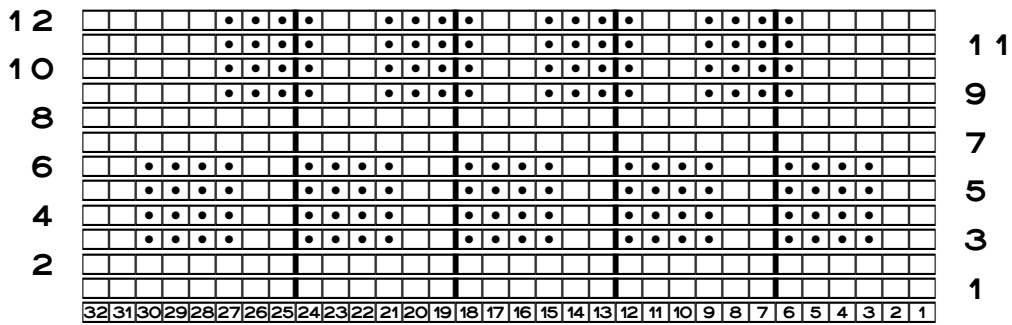
Looking at each group of stitches between pairs of stitch repeat boundaries, we can see that we have identical groups across all twelve rows in three of the stitch groups: seven through twelve, thirteen through eighteen, and nineteen through twenty-four.

But again, stitches one through six do not match stitches twenty-five through thirty. They're just different, matching neither the three identical groups nor each other.

Do you see it? We have three groups of stitches that are absolutely identical. We could have thirty or three hundred groups on our needles, to make a project that was somewhat wider or a lot wider.

But the stitches that come before and after those three groups... Those two groups of stitches are **all** plus stitches in this new configuration. Remember, we didn't want partial blocks on the rows of offset blocks. So when we changed those purl stitches to knits, that altered what we had to do before the first stitch repeat and after the last stitch repeat on the row of offset blocks.

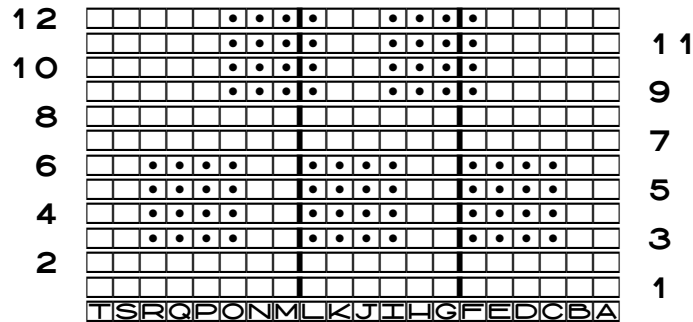
Maybe it will be clearer without one of the stitch repeat boundaries.



How does this version strike you? The three stitch groups between the four stitch repeat boundaries are all identical. Since they're all identical, they make up the pattern repeat.

The stitches before the first boundary and the stitches after the last boundary **both** constitute plus stitches. We must have plus stitches both before **and** after the stitch repeat. That outcome shouldn't surprise us, because we wanted to change, fairly significantly, both ends of the row of offset blocks.

So here's the preliminary pattern chart, using letters instead of numbers since we now have fewer than twenty-six stitches.



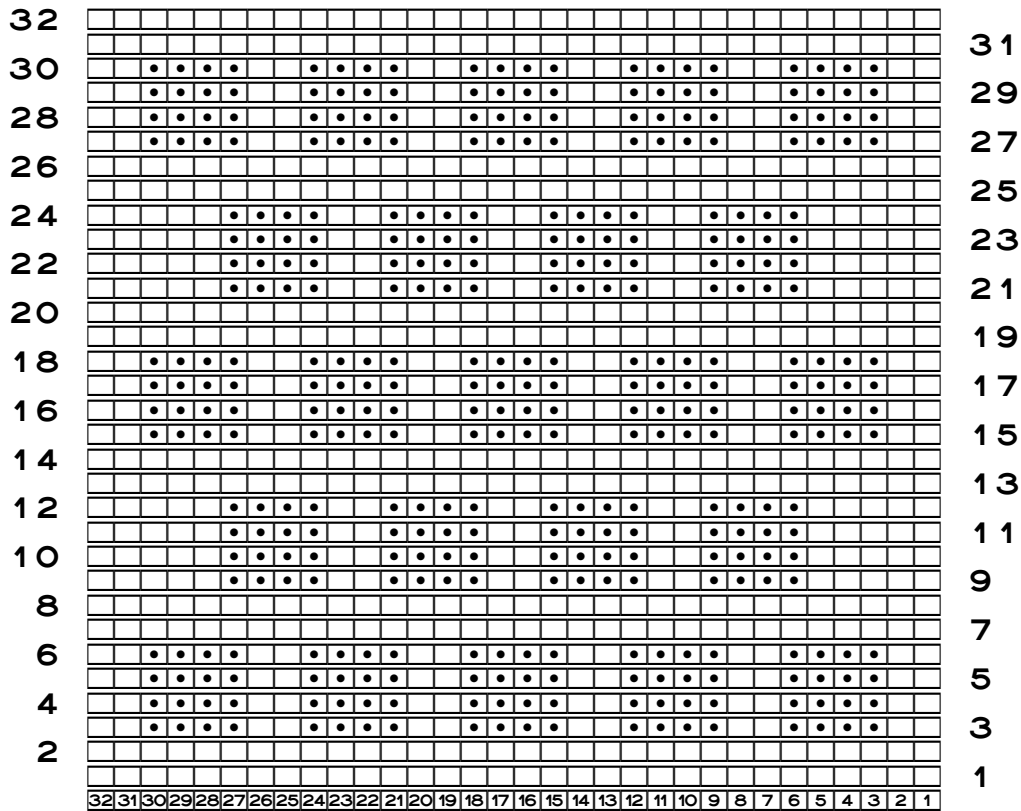
Stitches G through L form the stitch repeat. We would repeat those six stitches over and

over and over across the width of the project. The more stitch repeats we have, the wider the project will be.

But stitches A through F **and** stitches M through T are **all** plus stitches. This new variation has plus stitches before and after the pattern repeat, and the two groups of plus stitches happen to have different numbers of stitches.

The Row Repeat

Let's go back to the entire equivalent chart so we can find the row repeat.



Which row duplicates row one, **as row one relates to the rows that follow?**

Clearly, row two, even though it is also a row of stockinette, does not fit this criterion. So what is the difference about row one? What is its precise function in the chart? Row one is the first of two stockinette rows below a row of original blocks.

Rows seven and eight are the two stockinette rows below a row of offset blocks.

What about row thirteen? Row thirteen is the first of two stockinette rows below a row of original blocks.

Let's double-check. Rows one and thirteen are indeed the same. That means rows two and fourteen, rows three and fifteen, and rows four and sixteen also must be the same. They are.

If row thirteen is the same as row one, then row twelve must be the last row of the pattern. So let's see if row... Which row do we have to look at? If row thirteen is where the rows start repeating, which row has to match row twelve? In other words,

Row 1 through row 12 *needs to be the same as* row 13 through which inclusive row?

Twelve minus one is eleven, so we add eleven to thirteen to see which row has to be the same as row twelve. Eleven plus thirteen is twenty-four, so we have to see if row twenty-four is the same as row twelve.

Row 1		Row 13
↓	adds 11, so for	↓ add 11 to get
Row 12		Row ??? Row 24

We could also add the difference between the first row numbers of the two pairs of row ranges to the first pair's final row number. Since thirteen minus one is twelve, we add that to the ending row number of the first row repeat to again get twenty-four.

When we move from the beginning of one row repeat to the beginning of the next,

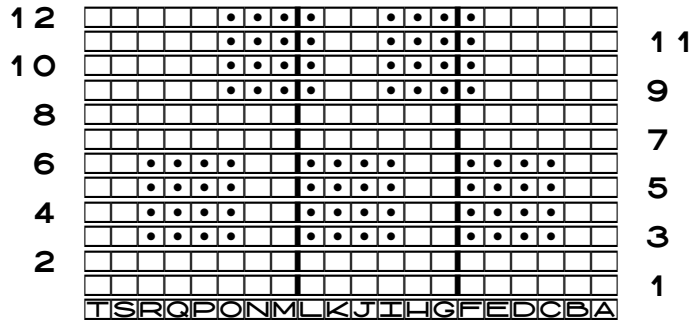
we move from row 1 to row 13, adding 12

so we add 12 to

the end of one row repeat to move to the end of the next, which is row 24

Are rows twelve and twenty-four the same? Yes, they are. Both rows form the top edge of a row of offset blocks.

So the row repeat is rows one through twelve, repeated over and over again until the piece is long enough. (Or we're starting to get low on the project yarn, or we're just tired of this project, or...)



Are We Done Yet?

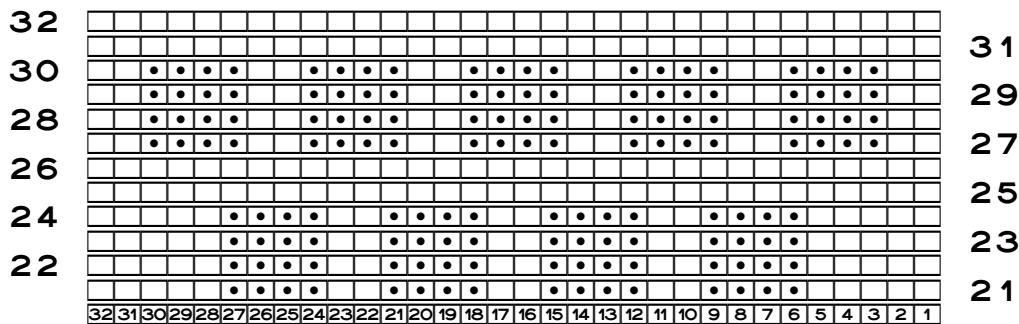
Suppose we're using the chart above to make our blanket. We're knitting along, working rows one through twelve over and over. But if we stop at row twelve of the pattern and move immediately to the top border, do we get the result we want?

If we go straight from pattern row twelve to the top border, we have missed two things:

1. We end with a row of offset blocks, which we didn't want to do.
2. We don't have two rows of stockinette between the last row of blocks and the top border.

Finding the Plus Rows

Let's look again at the last two rows of blocks from the equivalent chart.



We already determined that row twenty-four, the top edge of the second row of offset blocks, is the last row of the second row repeat. Rows twenty-five through thirty-two resolve both issues noted above:

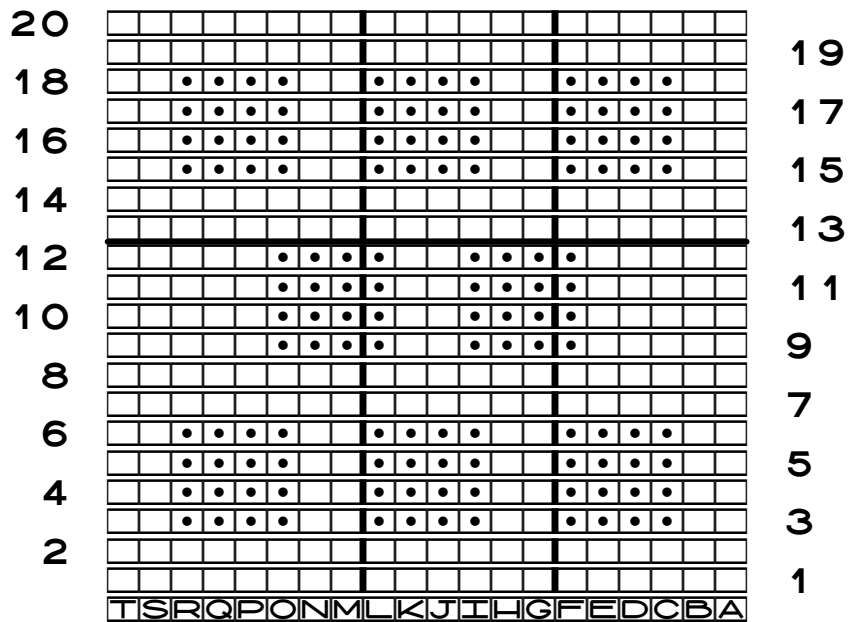
1. ending with a row of original blocks
2. having two rows of stockinette between the last row of blocks and the top border

That means that **rows twenty-five through thirty-two are the plus rows** for this variation of the basket-weave stitch pattern.

Remember, plus row(s) are done only once, at the beginning and/or end of the entire piece, to make the top and bottom edges of the pattern area be symmetrical (or to neatly start and/or finish a pattern that is not symmetrical). Once we've worked two, twenty, or two hundred rounds of the basket-weave row repeat (rows one through twelve), we work rows twenty-five through thirty-two just once.

A Complete Chart for Variation 1

We identified the roles of all the stitches and rows in the equivalent chart, and we removed all the duplicates. Now we can construct the final working chart for the variation of the basket-weave pattern that eliminates partial blocks at the left and right edges and that puts a row of original blocks at the top of the project to match the row of blocks at the bottom.



Interpreting This Chart

This chart looks quite a bit different from what we started with. So how do we work from it?

Remember that we have to have special areas on the chart to account for the tweaks that we wanted: avoiding partial blocks, and finishing with a row of original blocks and two rows of stockinette at the top of the piece.

The Stitch Repeat and Plus Stitches

To make sure we don't have partial blocks on the edges of the row of offset blocks, we need

- ☉ stitches A through C as public-side knits to omit a partial block from the right edge
- ☉ stitches R through T as public-side knits to omit a partial block from the left edge

Note that on the row of offset blocks, there are five knit stitches before the first block and after the last block, which keep the row of offset blocks symmetrical.

Since there are **two** stitch repeat boundaries in the chart, the stitches **between** them constitute the stitch repeat. They break up the chart into the right edge's plus stitches (stitches A through F), the stitch repeat itself (stitches G through L), and the left edge's plus stitches (stitches M through T).

The Terse Stitch Repeat Description

When we see patterns in a stitch dictionary, the first line usually says something like "multiple of 12 plus 3" or even just "10 + 2."

When we determined the pattern repeat of the original version of the basket-weave stitch pattern, we saw that its repeat description was "6 + 2," which meant the stitch repeat was six stitches wide, and we needed only two plus stitches to balance the left and right edges. The basket-weave stitch repeat for this variation is still six stitches wide, so "6 +" will be the first part of our terse description. What number do we put after the "+" for the number of plus stitches?

Since we have two groups of plus stitches, we have to add together the number of stitches in both groups for the second half of the terse description. The first group is six stitches wide; the second is eight.

That means "6 + 14" is the terse description of the stitch repeat for this variation of the basket-weave pattern.

The Row Repeat and Plus Rows

Rows one through twelve, worked over and over, will give us paired rows of blocks, a row of original blocks and a row of offset blocks.

But to make sure that the final row of blocks at the top of the piece is a row of original blocks, we work rows thirteen through twenty just once, after we have worked as many repeats of rows one through twelve as wanted or needed. Rows one through twelve are the row repeat, and rows thirteen through twenty are the plus rows.

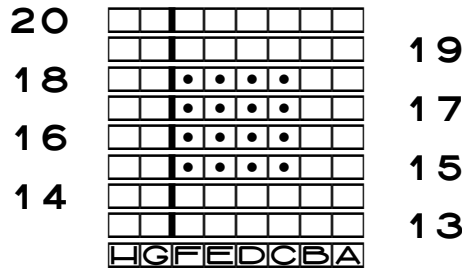
This stitch pattern happens to have plus rows only after the row repeat. Other stitch pat-

terns may have any number of plus row(s) both before and after the row repeat, only before the row repeat, or only after the row repeat.

Plus Rows Usually Have the Same Stitch Repeats

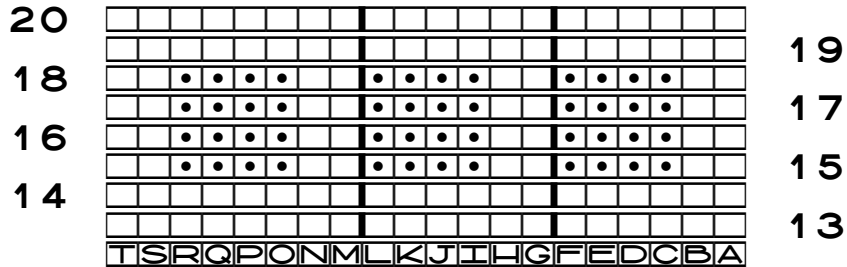
Look back at stitches G through L on rows thirteen through twenty. That group of stitches has to be repeated across the top edge of the piece. Why? Because those stitches make all the central blocks between the first and last blocks.

If we wanted to, we could have the plus rows as a separate chart with fewer stitches.



According to the rules of interpreting charts, we work stitches A through F over and over across the plus rows, then we work stitches G and H just once, as plus stitches.

Why can we simplify the plus rows this way? If we compare that condensed chart to the section of the chart showing just the plus rows, we can see that stitches A through F on rows thirteen through twenty are the same as stitches G through L and M through R.



We might not always have this kind of situation, but if it's there, we can feel free to split the chart into different pieces to simplify it. Doing so will often let us use a bigger font size—one more bonus.

Final Charts for Variation 1

We can actually do the final charts at least two ways.

An Extended Version

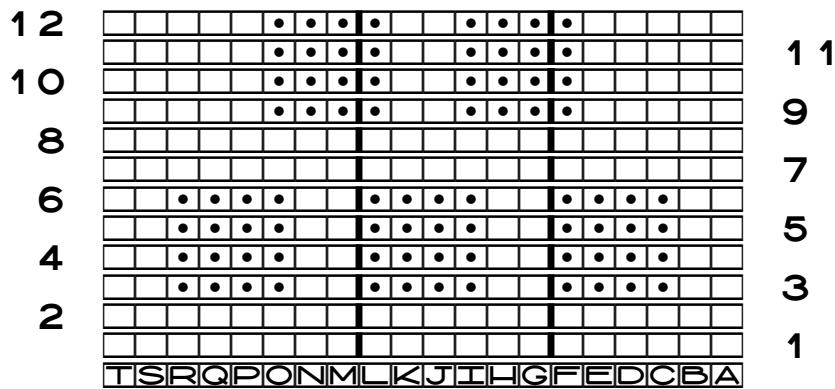
This layout is more explicit, but it takes up more space.

BASKET-WEAVE VARIATION 1

multiple of 6 + 14

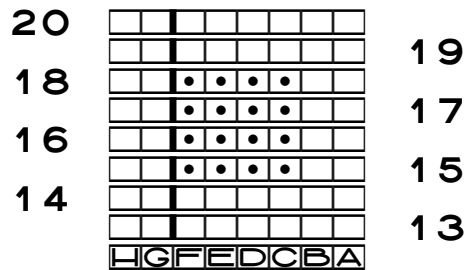
Main Pattern Rows

Work rows 1–12 as many times as desired.



Plus Rows

Work rows 13–20 after completing the final set of main pattern rows.



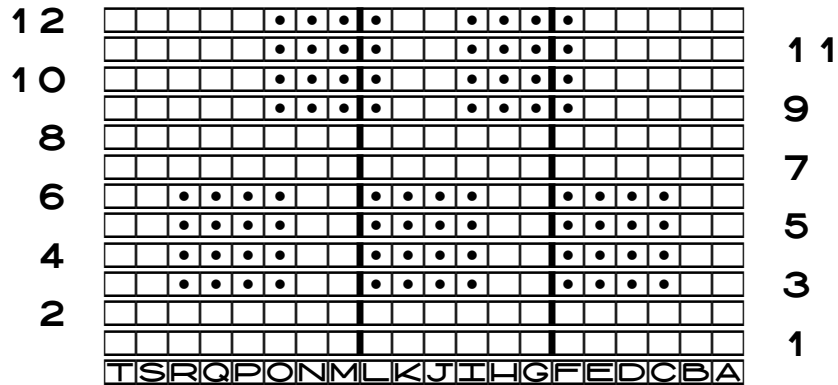
The Most Compact Version

This is a no-brainer (but I still almost missed it, because some things are just too obvious).

BASKET-WEAVE VARIATION 1

multiple of 6 + 14

Work rows 1–12 as many times as desired. Then work rows 1–8 once.



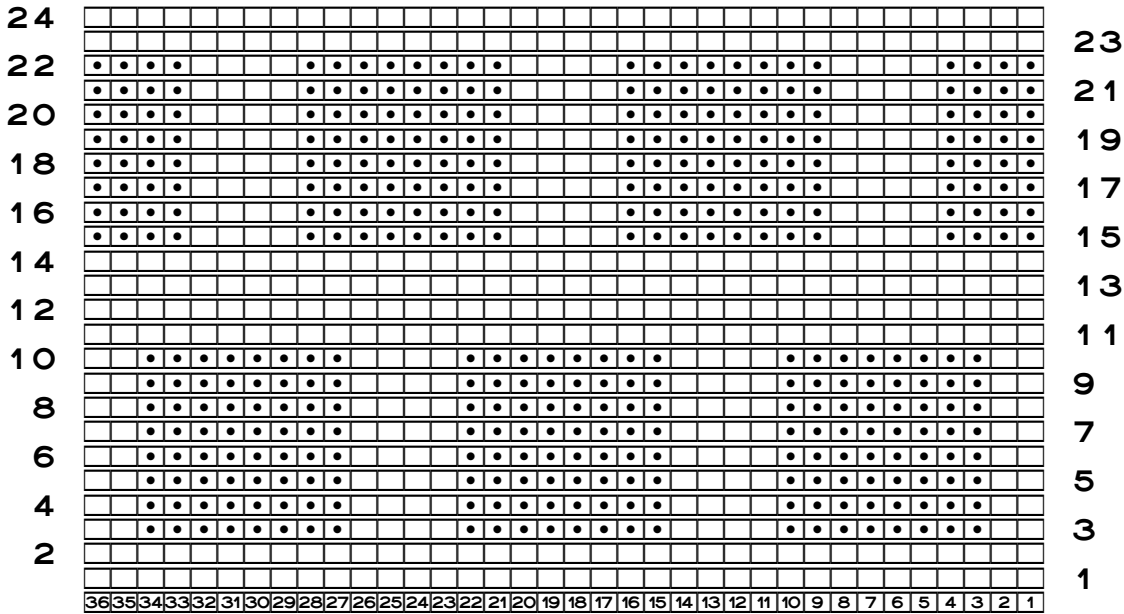
More Tweaks to the Basket-Weave Pattern Chart

Let's see what other ways we can change the original basket-weave chart.

Variation 2: Make the Purl Blocks Bigger

If we want to increase the scale of the basket-weave stitch pattern so that the blocks were much bigger for our blanket, it's simple to make each purl block both wider and taller. We already saw in the purl diamond project how to scale a motif's size.

Here's a basic chart with eight-by-eight purl blocks with four stitches and four rows of stockinette between the blocks. As an exercise, figure out the pattern chart for this variation as well as one that omits the partial blocks. One possible chart for each is in the appendix "Answers."



Variation 3: Make the Purl Blocks a Measured Size

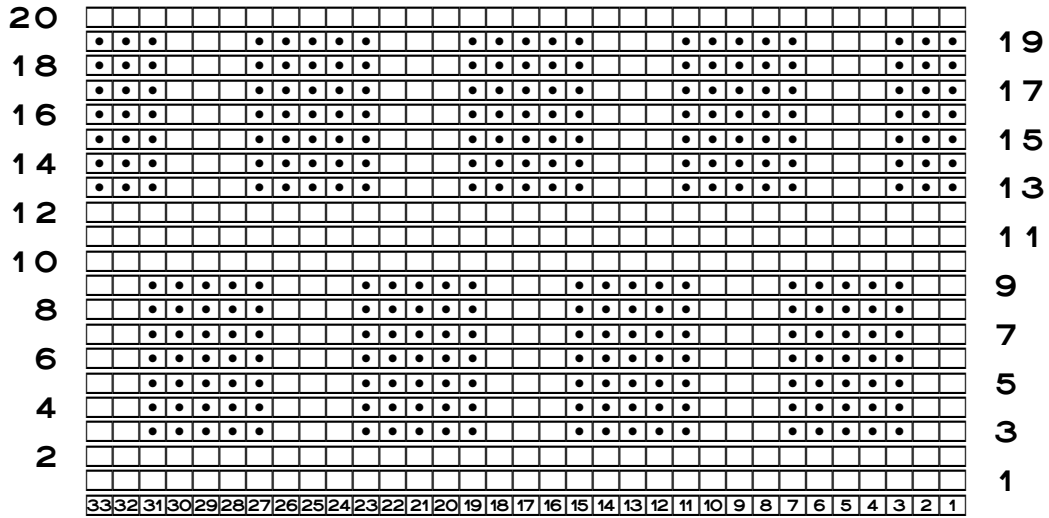
What if we wanted our blocks to be a specific measurement, say one inch square, instead of an equal number of stitches and rows?

We would have to use our stitch and row gauges to determine the width and height of each block. So if we get five stitches and seven rows per inch in stockinette, then for one-inch-square purl blocks, we would have to make them five stitches wide and seven rows tall.

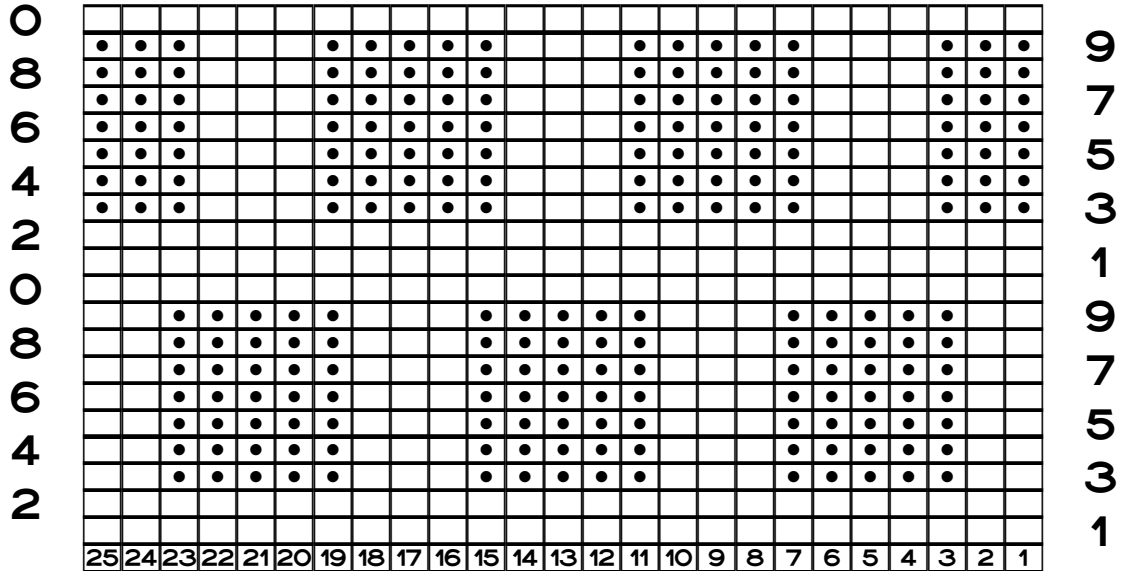
What if we want a quarter of an inch between the blocks? We would need one-quarter of five stitches between the blocks in each row, and one-quarter of seven rows between rows of blocks. Since neither five nor seven is evenly divisible by four, we have to choose either one or two stitches between the blocks’ vertical edges and two or three rows of stockinette between rows of blocks.

We can select between two and three rows as we wish, but having a single knit stitch between blocks horizontally might mean that we won’t see that stitch at all (it will probably act like 1x1 ribbing). With two stitches between blocks, it will be impossible to center the blocks above one another. Even if we didn’t mind the off-center positioning, we may again get the pulling-in effect of ribbing, exactly as we saw in the Aran sampler in part one. So we’ll put three stitches between blocks on the same row as well as three rows between rows of blocks.

The following chart shows the new pattern. If we chart on knitter’s graph paper (see the part one chapter “Charting on Paper”), the purl blocks will actually look square.



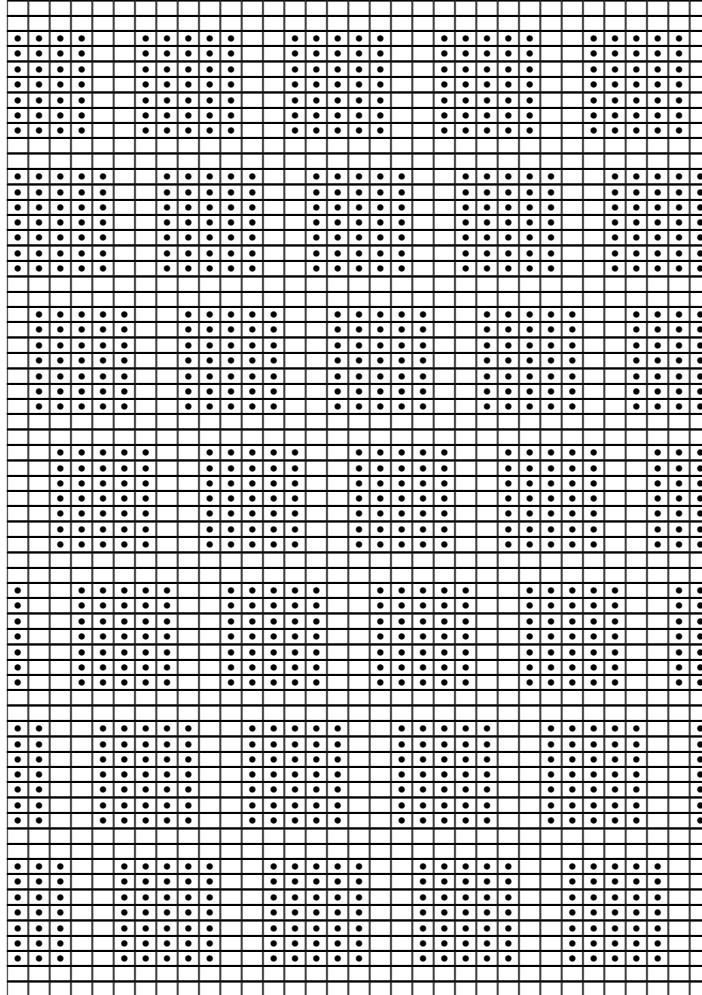
But we can also make a proportional computer chart. This one has five stitches and seven rows per inch, made by using the two simple steps described in the appendix “Designing by Charting.” (I had to eliminate some stitches and make the row numbers be single digits so the chart would be life-size.)



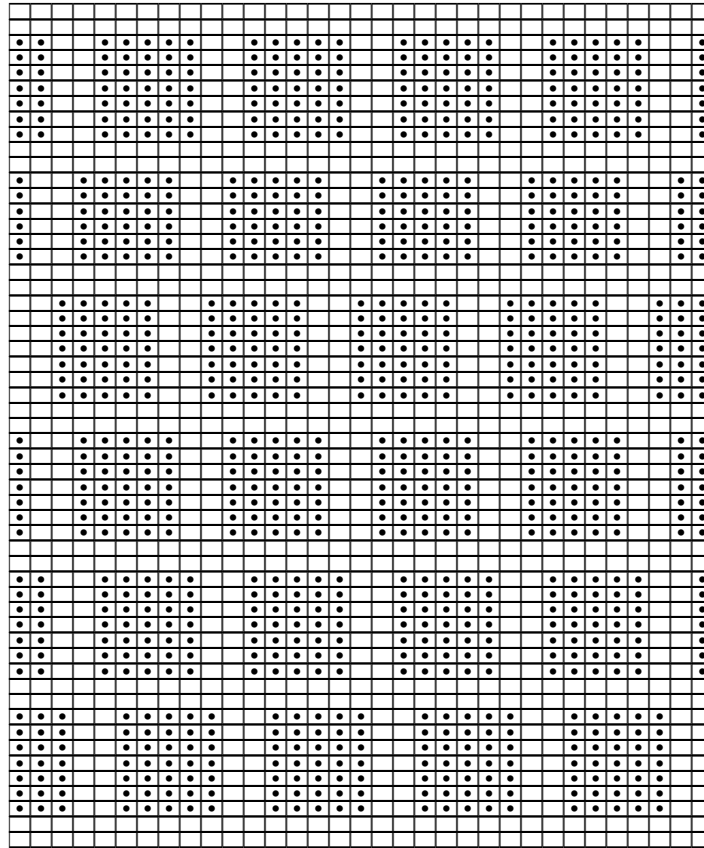
But we don't have to center each row's blocks above the previous row's. We could do several rows of blocks that keep moving over a stitch or two, which would give a completely different effect.

The next two charts are also proportional at five stitches and seven rows per inch, but

they've also been compressed to fit on the page. The extra step to compress a chart, in this case by 180%, is also explained in "Designing by Charting."



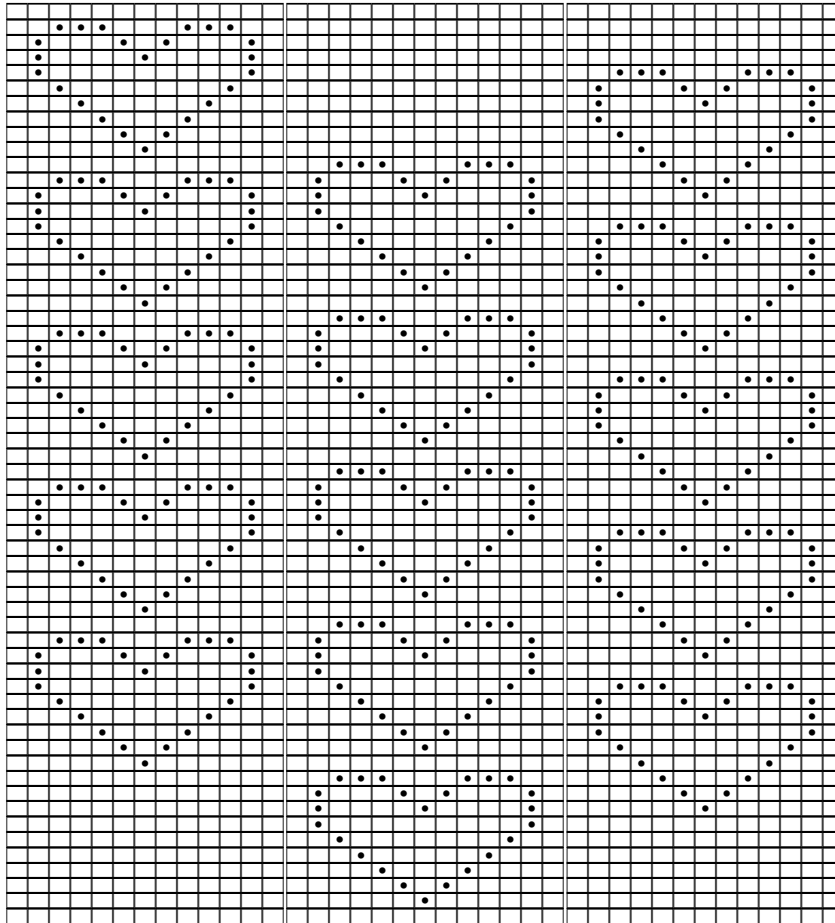
We could also shift the blocks back and forth to create a herringbone pattern.



If we chart in the computer, we can go wild designing new stitch patterns. We can save each new design as a separate file to create our own stitch dictionaries, and we can do it all without casting on a single stitch.

Even charting on paper, we could, for this type of pattern, make several short, wide strips that have several purl blocks, then we can put the strips above and below one another and slide them back and forth to test different arrangements.

For other stitch patterns, we might make several tall, narrow strips, place them side by side, and slide them up and down to our liking. Here's an example with hearts. We could make each strip of hearts different sizes, add interior texture or color, and whatever else we can dream up. If we wanted a project with all four card suits, we'd add columns for diamonds, spades, and clubs, making them all as similar or different as we want.



We could draw lots of individual motifs, then move them around individually on a sheet of grid paper if we want them positioned randomly. Once we find positions we like, we tape down the pieces or mark their outlines on a larger piece of grid paper.

If the layout is random, we add row numbers and cast on. If the layout is supposed to repeat horizontally and/or vertically, we find the pattern repeat as usual. When we double-check its accuracy, we may decide to do tweaks like those in this chapter. When we finally get the chart to our liking, we determine the number of stitches to cast on, then grab needles and yarn.